

# SHADES OF GRAY



VOLUME 2, NUMBER 2

Summer/Fall 2005



## Lights, Camera, Ocean Gray's Reef Hosts Second Ocean Film Festival September 23–25

This year's Gray's Reef Ocean Film Festival opens Sept. 23 with an evening with pioneer underwater film producer and photographer Stan Waterman.

The goal of the Ocean Film festival is to educate, inspire, entertain and foster a spirit of ocean stewardship through the screening of films that explore our relationship to the

For Complete  
Schedule See Page 6

sea. NOAA's Gray's Reef National Marine Sanctuary brings this festival of ocean films to Savannah to celebrate marine conservation worldwide and to encourage commitment to sustaining healthy oceans and coasts.

Waterman's awe-inspiring films have won him five Emmy awards. His works include *The Deep* and the classic *Blue Water, White Death*. This will be his first appearance in Savannah.

Waterman will screen several of his films including clips from *Blue Water, White Death*, a groundbreaking film about great

white sharks. The festival will also screen the world premiere of his new film, *Bull & Tiger Sharks in Fiji*. After the film, Waterman will answer questions from the audience.

On Sept. 24, filmmaker Frank Capra, Jr., will screen his film *The Power of Water*. This film was part of Capitol Hill Oceans Week this summer.

The festival closes Sept. 25 with the thought-provoking film, *The Guerrero Project*, about the efforts to find and explore a slave ship that was sunk in the Florida Keys with its cargo. The Savannah screening will be the premiere of the final cut of *The Guerrero Project*, a selection of the Independent Black Film Festival, and will be the film's launch.

All films are free; tickets will be available at the Trustees Theater box office, 216 East Broughton St., Savannah, Ga., phone (912) 525-5050, starting September 1st. Films and speakers are subject to change without notice. For more information, call (912)

598-2345 or check [www.graysreef.noaa.gov](http://www.graysreef.noaa.gov). In addition to the films in downtown Savannah, there will be two days of special films for younger children at the Tybee Island Marine Science Center.

*Continued on page 2*



## Summer of Science Invertebrates: One Focus of the *Nancy Foster* Cruise

Gray's Reef is full of visitors in the summer—scientists, students, divers, and recreational fishers, members of the media and others. This summer, we added Congressional aides to that list.

Some of the more conspicuous visitors to Gray's Reef apparently include larval invertebrates that drift into the sanctuary

on ocean currents and metamorphose into a form that allows them to settle on the bottom and grow into adult form.

Looking at how the community of invertebrates in the sanctuary is structured was one of the missions of this year's *Nancy Foster* cruise.

The NOAA Ship *Nancy Foster* is an 187-foot research vessel that provides a platform for various scientific projects. This summer's projects included counting fish populations, monitoring marine debris and exploring the invertebrate community for which the sanctuary is well-known. The *Nancy Foster* was on

station at the sanctuary from May 11 to June 2 and hosted two teams of scientists.

Georgia Southern University graduate student Rob Ruzicka was aboard the *Nancy Foster* studying sponges and the predators that feed on them. He found that sponges growing in the flat areas experience less predation than do the sponges on the rocky ledge. He is investigating if physical or chemical traits in the ledge-dwelling sponges can account for that difference.

Ruzicka extracts chemicals from sponges and concentrates them into squid-based

*Continued on page 3*

## SHADES OF GRAY

Editor  
Gail Krueger

Sanctuary Manager  
Reed Bohne

Photography  
All photos copyright GRNMS unless  
otherwise noted.

Line drawings  
All line drawings copyright GRNMS  
unless otherwise noted.

Unless specifically stated, the views  
expressed in this issue do not  
necessarily reflect the opinions of the  
Gray's Reef National Marine Sanctuary,  
the National Marine Sanctuary System  
or NOAA.

We welcome comments and will  
consider publication of items  
submitted by readers as space permits.

Comments and articles should be  
sent to:  
Gail Krueger  
Gail.Krueger@noaa.gov  
10 Ocean Science Circle  
Savannah, GA 31411

### GRAY'S REEF STAFF

Sanctuary Manager  
Reed Bohne  
Administrative Coordinator  
Debbie Meeks  
Operations Coordinator  
Keith Golden  
Outreach Coordinator  
Gail Krueger  
Research Coordinator  
Greg McFall  
Education Coordinator  
Cathy Sakas  
Planning Coordinator  
Becky Shortland  
Regional Projects Coordinator  
Jim Sullivan

Printed on paper containing 60% recycled  
content with 30% post-consumer waste,  
meeting EPA federal minimum standards.  
Printed with soy-based inks.

Thanks to a grant from the City of  
Savannah's Weave a Dream Program, on  
Sept. 26, the director of *The Guerrero  
Project*, Karuna Eberl, and cast and crew  
members from that film will give a special  
community lecture at Savannah State  
University.

In addition, the grant makes possible two  
enrichment programs about marine resourc-  
es for students—an essay and art competi-  
tion. The essay contest is open to any public  
or private school student in grades 7-12  
and the visual arts competition is open to  
elementary students in kindergarten through  
6th grade. Students in either contest may  
submit an entry focused on one of four top-  
ics: Ocean Exploration, African Americans  
and the Sea, Coastal Issues, or Marine  
Protected Areas.



## Teachers Explore the Sanctuary During Joint workshop with Georgia Aquarium

**"I**t was an awakening to me to learn  
how much we effect the water at  
Gray's Reef," Kelly Walls, a middle  
school science teacher from the hills of north  
Georgia, said as she and 15 other teachers  
tried to gain their sea legs aboard the R/V  
*Savannah* in June.

The trip to Gray' Reef aboard the *Savannah*,  
the research vessel of the Skidaway Institute of  
Oceanography, was the culmination of a trip  
that had started in Atlanta at the headwaters  
of the Altamaha River. For five days the  
teachers followed that watershed by bus, canoe  
and pontoon boat until they reached Sapelo  
Island and the sanctuary, 17 miles offshore.

The educators' workshop was jointly presented  
by Gray's Reef and the Georgia Aquarium.  
Eight teachers from the greater Atlanta and  
north Georgia area and eight teachers from  
the coast where selected to take the trip.

The goal was to show both groups that the  
sea is impacted by the actions of all who live  
upstream and to have the teachers take that  
lesson back to their classrooms this fall. The

*Continued on page 5*

## From the Sanctuary Manager

By Reed Bohne, Sanctuary Manager

**E**yewitness accounts are powerful.  
Each time we dive into our sanctu-  
ary we witness with our own eyes another  
reason why this is a special place. The  
ongoing investigation of the invertebrate  
and fish communities of Gray's Reef  
National Marine Sanctuary through  
scientific diving shows us something new  
each summer field season.

This summer, researchers from Georgia  
Southern University continued document-  
ing the invertebrates of sanctuary. They  
have seen, among many other things, that  
areas cleared of living organisms as part  
of a study are slow to re-grow the living  
carpet of invertebrates that distinguish  
Gray's Reef. That is a sobering thought in  
context of man-made or natural disasters  
that could befall the sanctuary.

Volunteer divers for the Reef  
Environmental Education Foundation  
(REEF) use their eyes to document fish  
population trends. This year they saw large  
snappers that may indicate the general  
good health of the sanctuary. They also  
saw a tiny orange spotted blemy, a fish  
so small it could be overlooked by all but  
trained eyes.

We invite you to use your own eyes to  
witness the majesty of our ocean planet,  
even if you do not dive, by exploring the  
seas through film. In September, Gray's  
Reef will present more than 20 films that  
explore ocean issues and the ocean envi-  
ronment.

Ever since innovators like Jacques  
Cousteau and Stan Waterman took  
cameras below the surface, film has been  
one of the ways people's eyes have been  
opened to the wonders of the sea. This  
we will present films about sharks, under-  
water exploration, shipwrecks, maritime  
heritage and just how people live with  
the sea.

So come and be an eyewitness to the  
wonders of the seas—seeing is believing  
after all.

*Nancy Foster continued from page 1*

food cubes that are offered to fish. The fish eat some cubes and reject others depending on which sponge chemicals they contain. Another graduate student, Chris Freeman, is also feeding sponge-chemical-laced food cubes to sea stars. His investigations involve further refining the potential sponge defense chemicals. There is much interest in sponge chemicals because of their potential use by the pharmaceutical industry.

Both Ruzicka and Freeman are working with Georgia Southern University professor Danny Gleason on an on-going project to fully catalog all the invertebrates of Gray's Reef.

Patrick Erwin, a doctoral candidate from the University of Alabama, is investigating sponge morphology. Sponges of the same species can look different because of the environment in which they grow. Erwin is trying to determine what causes the differences to develop.

Gleason is also conducting a study to determine how the rocky ledges would be re-colonized by invertebrates if a natural or man-made disaster were to impact the sanctuary. He and his students mark off patches of reef, clear away all the invertebrates and photograph the patches at regular intervals to record re-growth. So far, the study indicates it would take a very long time to re-grow the living carpet of invertebrates that distinguish Gray's Reef.

Invertebrates are not the only reef residents that got attention from the teams aboard the *Nancy Foster* this summer. Other researchers continued the work of

using differing techniques to monitor fish populations.

The fish population survey compares different traditional fisheries assessment techniques used to determine fish abundance. Fish traps, dives, and acoustic sensors were deployed from the *Nancy Foster* to look at fish abundance in the sanctuary. Data collected during this survey will be made available to scientists as they develop hypotheses to address management issues in our region.

The scientists and divers explored approximately 80 randomly selected sites that represent the four basic habitats types within Gray's Reef—ledge, sparse live bottom, flat sand and rippled sand. Biotic and abiotic data found within the sanctuary was collected. The biotic data include the percent cover of sponges, gorgonians, macro algae, corals, and other sessile biota. The abiotic factors include the percent cover of sand, shell rubble, hard bottom, and fine sediments.

Data was also collected on marine debris defined as fishing gear, aluminum cans, and other man-made objects. Matt Kendall from NOAA's biogeography team is conducting a marine debris study. Kendall found that some of the more highly fished areas of the sanctuary are loaded with debris.

As always, the *Nancy Foster* cruise offered the Gray's Reef staff a way to communicate about the on-going research at the sanctuary to a wider community. Visits by local media and aides from the offices of Sen. Saxby Chambliss, Sen.

Johnny Isakson and Rep. Jack Kingston help bridge the gap between the scientists, the general public, and policy-makers.



Georgia Southern University student Sarah Mock picks small invertebrates off a chunk of Gray's Reef coral.

For more details on the 2005 *Nancy Foster* scientific cruise, check the Project Oceanica website at <http://oceanica.cofc.edu/>. On the site, Elizabeth Rogers posted daily logs from the *Nancy Foster* cruise.

Part of the College of Charleston, Project Oceanica's goal is to integrate education with oceanographic research. Project Oceanica was established with initial support from the NOAA Ocean Service Coastal Services Center.



## REEF Volunteer Divers Check Fish Population in Sanctuary

Carol Grant of Clearwater, Fla., likes looking for the unusual while she dives. That's what keeps her volunteering for Reef Environmental Education Foundation (REEF) advanced assessment team. So far, she reckons she has participated in 40 to 50 REEF dives; about 20 of them with the advanced assessment team.

Her latest dive was in Gray's Reef and she found the unusual again.

"I identified an orange spotted blemye, something that you would expect to see further to the south. And here it was in deeper water than I would expect," Grant said.

REEF was founded in 1990, out of growing concern about the health of the marine environment, and the desire to provide the scuba diving community a way to contribute to the understanding and protection of marine populations. REEF achieves this goal primarily through its volunteer fish monitoring program, the REEF Fish Survey Project. Participants in the project not only learn about the environment they are

diving in, but they also produce valuable information. Scientists, marine park staff, and the general public use the data that are collected by REEF volunteers.

Reef advanced assessment team members have earned their chops by participating in many volunteer dives and having their fish identification skills tested and verified. Each summer, REEF advanced divers help Gray's Reef monitor its fish population through visual counts.

"You may not think that one fish survey carries a lot of scientific weight, but when

*Continued on page 4*



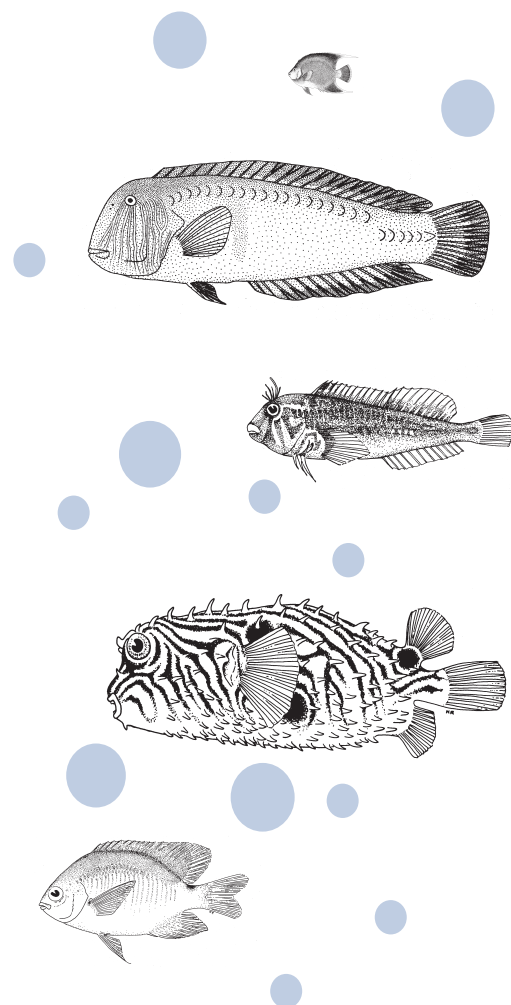
## Exhibit Update

Gray's Reef continues to expand its outreach throughout the southeast with exhibits in existing public facilities. Recently, the South Carolina Aquarium in Charleston, S.C., completed the first phase of Gray's Reef exhibit work.

An interactive microphone system was installed in a large tank to enable divers in the tank to talk to visitors about the livebottom habitat of Gray's Reef depicted in the tank. Graphic panels were installed through the aquarium pointing up connections to Gray's Reef and the National Marine Sanctuary Program. And an interactive kiosk that combines fish identification with basic facts about the sanctuary was installed.



James and Deborah Cunningham of Louisville, Ky., explore information about Gray's Reef at the newly installed information kiosk at the South Carolina Aquarium.



*REEF continued from page 3*

you take all 86,000 plus surveys that REEF has done, even the most critical scientists see the value in this type of citizen conducted science," Lad Akins, executive director, said at an evening talk he gave while visiting Gray's Reef.

The data that REEF gathers helps sanctuary scientists comprehend the changes that occur both seasonally and annually within Gray's Reef. Comparing the diversity of species from year to year, helps Research Coordinator Greg McFall understand what changes may be the result of natural variation and aids in the identification of population changes that might occur as the result of either natural or human-induced events. REEF also gathers data on the size and abundance of recreationally important fish species so that scientists can tell if the populations are increasing or decreasing from year to year.

REEF divers were in the waters at Gray's Reef for more than two weeks, diving as

many days and as many times a day as weather permitted.

The divers were pleased to see large groupers and large snappers— indications that the fish population is probably healthy at the sanctuary, according to Brice Semmens, a REEF diver from Seattle, Wash.

While the bigger fish are thrilling for all divers to see, it is the smaller cryptic fish like that orange spotted blemmy that REEF divers gain experience in spotting that make a difference in their outlook on the ocean, Akins said.

Akins related that when he was a scuba instructor he was constantly disappointed when divers came back from a trip and did not count it as a success unless they had seen a large shark or ray. To Akins, that left a whole world of wonder unseen.

"REEF teaches divers to appreciate more of the undersea world, if they appreciate it



Lad Adkins, of the Reef Environmental Education Foundation (REEF) prepares to lead a fish assessment team in the sanctuary.

more they are more inclined to take action on its behalf," he said.

Carol Grant echoed those sentiments. "I want to see that there are fish for the future and I want to do something to make that happen."



*Teachers Explore continued from page 2*

Gray's Reef "Rivers to Reef" curriculum was used as the basis of the trip's instruction package.

Walls certainly got the message.

She lives near the headwaters of the Oconee River, a tributary to the Altamaha River that empties into the sea near Gray's Reef. "We can and do make a difference in the health of that river by our actions and that makes a difference to Gray's Reef," she said.

"Now that I've seen that for myself, I can take that back to my classroom—it will make me better able to share that lesson with my students." Walls teaches seventh graders and gifted students at the Banks County Middle School in Homer, Ga.

Vince Parton, the media specialist at Low Elementary School in Savannah, Ga., was looking upstream as Walls was looking down.

"For me, this is an opportunity to find out more about Gray's Reef as a resource for our area and to make the connections between Atlanta and the sea," he said.

The teachers met with water quality experts from the federal Environmental Protection Agency and state water district managers and took water quality samples all along the way on their trip. Aboard the *Savannah*, Victoria Baylor and LeGinia Frazier of the Skidaway Institute explained how they are sampling for water quality in Gray's Reef.

"The water's fine here, you can jump right in," Baylor told the teachers.

Aboard the *Savannah*, the teachers learned how to drive the Gray's Reef Remotely Operated Vehicle (ROV) and saw the reef through its underwater camera.

The joint workshop was one of the first efforts between the Georgia Aquarium and Gray's Reef. Brian Davis, education director for the Georgia Aquarium, said he hopes the joint workshop can be done two times next summer.

The Georgia Aquarium, expected to open in late November, has interest in featuring Gray's Reef as well as the nation's other 12 marine sanctuaries in its educational program.



## World Oceans Day Volunteers Clean the Reef and the Beach for World Oceans Day

The second half of the June "Sweep the Reef, Sweep the Beach World Oceans Day Clean-Up" went off without a hitch. About 25 volunteers from Clean Coast picked trash up off the beaches of Ossabaw Island to support the Gray's Reef clean up. Clean Coast is a Savannah based grassroots volunteer organization which conducts monthly trash cleanups on Georgia's barrier islands and coastal marshlands, and works to educate the community about the hazards of marine debris and the importance of responsible waste management.

According to Karen Grainey of Clean Coast, the volunteers picked up 35 bags of mixed trash (estimated total weight of 700 pounds) and seven bags of aluminum beverage cans. The most numerous items were plastic beverage bottles, followed by other plastic containers and fishing gear. A working crab trap, an example of "ghost" gear, and a large plastic lounge chair were also found, Grainey reported.

The underwater portion of the clean-up was postponed twice due to weather condition, but was eventually held on July 16 and 17. Preliminary data cards indicate beverage cans, bait containers, fishing line, fishing lures, rope and a scuba knife were among the items of trash the volunteer divers picked up.



Karen Grainey (left) and Charlotte Dixon, both of Clean Coast on their way to sweep the beach of Ossabaw Island as part of the Gray's Reef sponsored "Sweep the Reef, Sweep the Beach Clean Up" held in honor of World Oceans Day.



Children who participated in the first "Trees to Seas" fun run got a chance to make sea jellies from recycled materials with the help of Gray's Reef volunteers. The fun run was created by the UGA Marine Education Center and Aquarium (MECA) to raise money for the marine science program at Thunderbolt Elementary School, Thunderbolt, Georgia.

*Credit: Edie Schmidt, MECA*



Judy Wright (center) of Gray's Reef was nominated as one of the National Marine Sanctuary Program's Volunteers of the Year. Judy served as the chair of the Grays' Reef Sanctuary Advisory Council for one year and has served as a Council member since 1999. The volunteers were honored in Washington, D.C. as part of Capitol Hill Oceans Week in June.

*Credit: National Marine Sanctuary Foundation*



# Ocean Film Festival Featured Programs

Unless specifically stated, the views expressed in these films and videos do not necessarily reflect the opinions or policies of Gray's Reef National Marine Sanctuary, the National Marine Sanctuary System or NOAA.

Films and speakers in this festival are subject to change without notice.

For a complete description of the films, see the Gray's Reef website at [www.graysreef.noaa.gov](http://www.graysreef.noaa.gov)

## Friday, September 23

Giants of Underwater Film  
Featuring Stan Waterman —7 p.m.  
Dalirium Ocean Symphony  
3000 years Under the Sea  
Blue Water, White Death  
Bull & Tigers in Fiji  
The Sharks of Guadalupe

A question and answer discussion with Stan Waterman will follow.

## Saturday, September 24

From Cousteau to Capra—Our Changing Views of the Ocean  
Featuring Frank Capra, Jr.—7 p.m.  
Healthy Oceans, Healthy Humans  
Sustainable Reef  
Destroyer at Peace  
Sea Scope  
The Power of Water

A question and answer discussion with Frank Capra, Jr. will follow.

## Sunday, September 25

Maritime Heritage in the Southeast  
Featuring Karuna Eberl—7 p.m.  
Health Oceans, Healthy Humans  
The CSS Georgia, The Wretched Ship That Saved Savannah  
The Guerrero Project

A question and answer discussion with Karuna Eberl and others from *The Guerrero Project* will follow.

*"This program is sponsored by the City of Savannah's Department of Cultural Affairs Weave - A - Dream Program and the Georgia Council for the Arts through appropriations from the Georgia General Assembly. GCA is a partner agency of the National Endowment for the Arts, which believes that a great nation deserves great art."*

## More Ocean Films

### Saturday, September 24

Sea Turtles and Whales—10 a.m.  
Journey of the Loggerhead  
Last Journey of the Leatherback  
Saving Springer

Troubled Seas, Troubled Shores—1 p.m.  
Our Synthetic Sea  
Flip Flotsam  
Washed Away

Living with the Sea—Adaptations—3 p.m.  
Short Infinity  
Berserk In the Antarctic  
Ocean Fury: Tsunamis in Action

### Sunday, September 25

Fishing Issues—10 a.m.  
Grouper Moon  
Farming the Sea  
King Crab  
Behemoths of Catalina

Surf's Up—1 p.m.  
Heart of the Sea  
Surfing for Life

Exploring Under the Waves—3 p.m.  
Under Antarctic Ice  
Coral Gardens of the Aleutians  
Vampire From the Abyss

## Tybee Island Marine Science Center Children's Program

At The Tybee Island Marine Science Center (912 786 5917) 10 a.m. to 4 p.m. September 24th & 25th 2005. Each program includes videos and hands-on presentations.

### Saturday, September 24

10 a.m. – 10:30 a.m.  
"Humphrey the Lost Whale" A True Story (30 minutes) All Ages

11 a.m. – noon  
"SeaHouse" Ten 5 minute programs (50 minutes) for grades Pre K – 3.

1 p.m. – 1:30 p.m.  
"Last Lives: The Manatee" (15 minutes) Grades 4 – 9

2 p.m. – 2:30 p.m.  
"The Conch's Life Story" (6 minutes) All Ages

3 p.m. – 3:30 p.m.  
"Ocean Locomotion in the Sea" A National Geographic film (16 minutes) All Ages

### Sunday, September 25

10 a.m. – 10:30 a.m.  
"Underwater Kids" (30 minutes) Grade 6 to Adult

11 a.m. – 11:30 a.m.  
"Death of a Whale" (17 minutes) Grade 6 – Adult

12:30 p.m. – 1:45 p.m. (35 minutes) Grades 4 – Adult

2:30 p.m. – 3:30 p.m.  
"Humphrey the Lost Whale" A True Story (30 minutes) All Ages

3:40 p.m. – 4 p.m.  
"The Rainbow Fish" (20 minutes, animated film) Grades Pre K – 3

## Fantastic Fishes Art Contest Fish and Fantasy Flourish Despite Downpour

Savannah's Forsyth Park once again swam with original artwork in chalk at the annual Sidewalks Arts Festival sponsored by the Savannah College of Art and Design on April 30. Though the festival ended early due to pouring rain, nearly 1,000 artists from more than 20 states participated. About 300 of them chose to compete for the Gray's Reef Fantastic Fishes Award.

The sudden downpour washed away the entries before many of them could be photographed. Gray's Reef National Marine Sanctuary Manager Reed Bohne had chosen the underwater fantasy scene of jockeys riding fish horses through a blue green sea as the winner of the Fantastic Fishes Award. The scene was created by Benjamin Ward, Britt Spencer, Sriram Rhat, Nic Radkowsky and Amy Hahn, who worked together as "Team Britt's Warhorse."

The student winners of the Gray's Reef Fantastic Fishes Award presented a

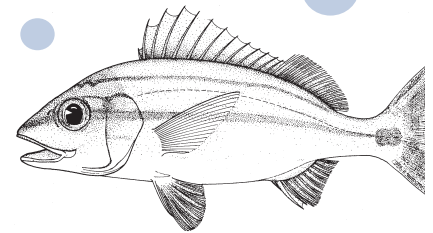
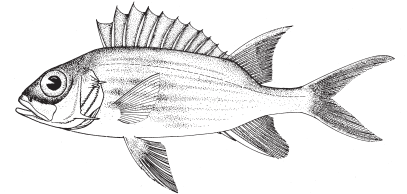
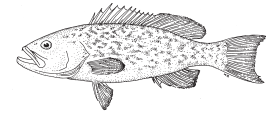
watercolor version of their winning entry to the marine sanctuary on August 1st.

This was the second year Gray's Reef offered the Fantastic Fishes Award for the best underwater scenes at the Sidewalk Arts Festival.

"The Sidewalk Arts Festival is one of the most popular and creative events in Savannah. The SCAD students are endlessly imaginative in their use of color and chalk on concrete. We look forward to another year's artistic exploration of ocean conservation and protection for our community," Bohne said.

Sanctuary staff was deeply grateful for team's gift of a watercolor version of the winning scene, Bohne said.

The alumni winner of the Fantastic Fishes Award was J. Brooke Livingston and the prospective student winners were the team of Kelley Peters and Justin Toone.





NOAA's Gray's Reef National Marine Sanctuary

## SHADES OF GRAY

10 Ocean Science Circle  
Savannah, GA 31411  
[www.graysreef.noaa.gov](http://www.graysreef.noaa.gov)



## About Gray's Reef National Marine Sanctuary

**N**OAA's Gray's Reef National Marine Sanctuary was established in 1981 to protect one of the largest nearshore livebottom reefs off the southeastern United States. The sanctuary is located about 17 miles east of Sapelo Island, Georgia and encompasses 17 square nautical miles.

An estimated 160 species of fish have been recorded at Gray's Reef; approximately 33 species spawn there. The ledges and overhangs of the reef serve as resting and foraging areas for threatened loggerhead sea turtles, which nest on nearby barrier islands. Gray's Reef is near the critical habitat area and only known calving ground for the highly endangered North Atlantic right whale. Pelagic sea birds and shore birds feed on schooling baitfish within sanctuary waters. The sanctuary is well known to the recreational divers and fishers who visit it.

The mission of the National Marine Sanctuary Program is to serve as the trustee for the nation's system of marine protected areas to conserve, protect and enhance their biodiversity, ecological integrity and cultural legacy.

For more information,  
contact NOAA's Gray's  
Reef National Marine Sanctuary  
offices at  
10 Ocean Science Circle,  
Savannah, GA 31411  
(912) 598-2345.

Visit us at [graysreef.noaa.gov](http://graysreef.noaa.gov)

